



June 1st 2006

Elaine Hebert
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Residential Buildings & Appliances Office
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2008 Title 24 Standards Public Workshop May 18-19

Dear Elaine,

I was not able to be present at this public workshop. However, I have just looked through some of the presentations made with respect to the cool roof presentations and the proposals for the new standards and have some further comments to add.

As one of the major suppliers of high performance complex inorganic colored pigments to the Building industry, we are still struggling with the proposal of the two tier system of approvals for the residential roofing construction types and having different requirements for both.

We understand, have worked with and appreciate the technical difficulties of the shingle suppliers to making a reflective shingle greater than 0.25. Once achieved, the colors that have become available meeting the 0.25 level are still similar to those that are available in the market today.

In the clay tile market, the current range of colors is such that a level of 0.40 is not likely to compromise the color offering too greatly.

In the presentations shown for the color range available for the concrete tiles, more than half of the standard colors would still not make 0.40.

Where the concrete tiles are coated, the consumer expectation of what is a durable roof must also be taken into consideration. Even though the initial and 3 year aged reflectance may meet the 0.40 requirements, doesn't mean that in 5 -10 years, when the color has changed radically that the consumer will change their roof again. They are more likely to complain and never return back to the same roof construction again. The

industry met the codes, energy may have been saved but the consumer will start to be unsatisfied in the not too distant future. A durable pigmentation is essential for all types of roofing systems, not just to meet codes and requirements. Such durable pigmentations are likely to achieve the 0.25 reflectance level, possible 0.30.

Shingles retain most of their color through the warrantied product lifetime and metal roofs not only retain color through the warrantied lifetime, but also retain a reflectance that changes very little from the initial values.

In the case of the examples of the metal roofing colors, a reflectance of 0.40 would eliminate 67% of the available colors. In the metal roofing industry, many of the current popular residential roofing colors fall within the 67% of colors eliminated. We are not sure that technology will allow the popular colors eliminated to reach the 0.40 proposal within a 5-10 year horizon!

Since the case is for energy savings in California and not just the survival or growth of a particular industry, I may have misunderstood, but I believe some of the greatest savings will be gained through metal roofs. If this is so, there should be no difference in the permitted reflectance value between shingles and metal roofs, since the energy savings are still likely to be higher for metal roofs at an equivalent reflectance of 0.25. Clearly, the savings will be less than at 0.40. However, I believe from an experience standpoint that the consumers will not choose the lighter metal roofs for residential purposes (they have that option available today). The metal roof has a medium/satin gloss that increases the glare. The darker the color, the lower the glare. Therefore, the darker colors are more popular in residential areas because they are both more aesthetically pleasing and the glare is somewhat reduced. Consequently, setting a value of 0.40 may have the effect of so significantly reducing the practical consumer choice, that they will go to other materials and a lower energy saving will result anyway.

We have not seen any data that would express the potential energy savings for each of the three roof systems if they all were to have the same, for example, 0.25, 0.30, 0.40 levels of reflectance. Once this was presented, a true comparison of the relative contribution to energy savings could be seen. The technical capability of each system of attaining a higher reflectance level could then be assessed and the overall impact on the whole residential roofing market from both a practical choice and material availability standpoint and also from an overall energy savings viewpoint to be reviewed.

The Shepherd Color Company supplies high performance complex inorganic colored pigments to many of the different industries supplying the Building & Construction industry. The roofing industry is one part of this market. As such, we have an interest in the development of regulations and legislations that might affect the industry. Whether the roofing construction is one of shingle, tile or metal panel construction, the colors that



The Shepherd Color Company
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are available to the marketplace are linked. We have supported the Cool Roof technology and regulatory advances throughout the last few years with several new technological developments and wish to see that the very important environmental and economic concerns have as little impact as possible on customer and consumer choices in the marketplace. In the majority of cases, this means the color availability and choice in the products that are brought to market. In this respect, we would not want to see that "Cool Roofs" have connotations of just white or pastel colors, when darker colors are used in practice and they can be made available in cooler technologies.

We will continue to work alongside your organization and it's contributing and supporting organizations and lend our support and develop new technologies that meet the new future regulatory and environmental challenges.

Yours sincerely,

Chris Manning
Marketing Manager, Coatings